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BEFORE THE  
**Federal Communications Commission**  
WASHINGTON, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Revision of the Commission's Rules to Ensure )  
Compatibility with Enhanced 911 Emergency ) CC Docket No. 94-102  
Calling Systems ) RM-8143

MOTION TO ACCEPT LATE-FILED COMMENTS

Siemens Rolm Communications Inc. ("Siemens Rolm") hereby submits this motion requesting that the attached comments, which are being filed two days after the scheduled January 9, 1995 filing date, be accepted by the Commission. To ensure that no party is prejudiced by this filing, Siemens Rolm will serve a copy of these comments on all parties who filed initial comments in a timely fashion in this proceeding. Granting Siemens Rolm's motion will aid in the creation of a diverse record and ensure that the Commission is able to consider the manufacturer's perspective.

Respectfully submitted,

  
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January 11, 1995

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**COMMENTS OF SIEMENS  
ROLM COMMUNICATIONS INC.**

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January 11, 1995

**Comments of Siemens Rolm Communications Inc.**

**on the**

**Notice of Proposed Rule Making, FCC 94-237**

Siemens Rolm Communications Inc. ("Siemens Rolm") hereby submits its comments on the above matter now before the Federal Communications Commission ("FCC"). As a major U.S. manufacturer of private branch exchange ("PBX") systems, Siemens Rolm believes it can assist the FCC by providing comments on the FCC's proposed rules ("NPRM") on enhanced 911 Service.

**Introduction**

Siemens Rolm has been an industry leader in the provisioning of enhanced 911 services for its PBX customers. We wholly support FCC actions to ensure that enhanced 911 emergency calling service is available to everyone regardless of the type of equipment serving them. We agree that effective operation of enhanced 911 services should not be compromised by new developments in telecommunications. Nor should the quality and capability of existing and future enhanced 911 service be compromised by regulations which are tied to current telecommunications technology.

**Rules proposed for PBX systems should be broadened to cover multi-line telecommunications systems (MLTS)**

Siemens Rolm recognizes that non-uniformity of enhanced 911 across the U.S. will deter universal provision of this service. We believe that enhanced 911 service should be available to everyone regardless of whether they are served by a single telephone, a private branch exchange ("PBX") or a key telephone system ("KTS").

Inclusion of KTS in rules regarding enhanced 911 is particularly important because the same equipment can often be registered as a PBX or KTS with minor software changes. Therefore, if a KTS does not have to comply with enhanced 911 requirements, we foresee multi-line telecommunications systems being registered as KTS just to circumvent the enhanced 911 requirements.

The use of the term "multi-line telecommunications system" (MLTS) is an industry standard. MLTS is used in both the TIA TSB103, "PBX and KTS Support of Enhanced 911 Calling Service," and in the T1.411 enhanced 911 trunk standard.

Uniformity in the way MLTS products provide enhanced 911 service should be a prime objective of FCC rules. Therefore, we suggest that the term "MLTS" be used instead of "PBX" throughout the NPRM.

**Federal regulations should assign specific responsibilities to public safety answering point, public networks, telecommunications equipment manufacturers and installers of that equipment**

The proposed rules impose requirements on MLTS and wireless systems equipment manufacturers. Siemens Rolm believes that this approach is too narrow. We suggest that the scope of consideration be broadened to include the systems of the public safety answering points (PSAP) and public networks, as well as the telecommunications equipment manufacturers and installers of that equipment. Interoperation among these systems is essential to ensure effective implementation of enhanced 911 services.

The importance of interoperation is particularly pronounced for wireless systems. The proposed rule would require a wireless system to provide both location information and a callback number. It is not sufficient, however, that the wireless system provide this information; it is also necessary that the interfaces between the wireless system and the 911 tandem office, and between the tandem office and the PSAP, be capable of obtaining and transmitting this information. Furthermore, the automatic location identification (ALI) database that provides correlation of a caller's telephone number to address and associated information must be enhanced to process additional information, dynamically available only from the wireless system, that specifically locates a mobile caller.

Siemens Rolm recommends FCC involvement to assure that provision of enhanced 911 services is standardized across the U.S. in both private and public sectors of telecommunications. At present, the ALI database information is not uniformly implemented across the U.S.

Siemens Rolm recommends that information presented to PSAPs, the structure of the ALI database, and the minimum required MLTS signaling protocol should be standardized across the U.S. for MLTS sites that require enhanced 911 trunks. We believe that these standards should be developed with the needs of wireless users in mind, as those will encompass the needs of desktop users. We further believe that FCC Part 68 is not an appropriate place for this standardization: it should be pursued in a standards-making body, such as TIA or T1.

Siemens Rolm recommends that ALI database maintenance be standardized across the U.S. in both private and public sectors of telecommunications so that coordination procedures to ensure accurate and timely transmission of database information by MLTS owners to local exchange carriers can be not only accurate, but also performed in a cost-effective manner. The proposed rules (§68.228) seem to prescribe a verification procedure that is unnecessarily cumbersome. For example, some PBX features allow telephone users to relocate a telephone by unplugging it at one location and plugging it in at another location, served by the same PBX, but not necessarily within the same emergency response location. The proposed ALI database maintenance procedure would limit the utility of this PBX feature. In order not to limit innovative and evolving technology, Siemens Rolm recommends either that the proposed procedure be streamlined, or that an MLTS should not be prohibited from maintaining its own local

ALI database and transmitting location information during an emergency call, should this prove technically and economically feasible.

Finally, Siemens Rolm agrees with the recommendation of TSB103 to standardize data link interfaces between the MLTS and ALI database management system.

**The proposed schedule for compliance to rules by wireless systems manufacturers should be coordinated with the compliance schedule for other responsible parties**

Siemens Rolm concurs with the need for compatibility of wireless systems with enhanced 911 services. However, compatibility will further require that enhancements to the appropriate network interfaces (wireless system-to-tandem office, 911 tandem office-to-PSAP) be agreed, standardized and deployed. The imposition of a requirement on the wireless system alone will accomplish no benefit to the users. In view of the time required to develop and deploy such network interface standards, we suggest that the one-year time frame for compliance by manufacturers proposed by the FCC is overly aggressive. The time frame should be set within the context of a coordinated resolution of all the issues that stand in the way of providing enhanced 911 to wireless users.

**Rules proposed for PBX systems should allow adjunct equipment to provide essential functionality**

The FCC proposal to require labeling of PBX equipment to describe its limitations in regard to enhanced 911 needs clarification. While many MLTSs by themselves may not comply with some or all of the FCC enhanced 911 requirements, the MLTS in conjunction with adjunct equipment can satisfy all requirements. If the FCC finds that labeling of MLTSs that do not of themselves meet all 911 requirements is necessary, that labeling should be able to identify the adjunct equipment necessary and to state the degree to which the MLTS and adjunct equipment combination meets the enhanced 911 requirements. Siemens Rolm believes that requiring compliance of the MLTS by itself as a condition of registration is unnecessary and could be economically disadvantageous to both users and vendors of MLTS.

**The FCC should resolve conflicts with the national numbering plan**

Siemens Rolm agrees that MLTS, including those provided by local exchange carriers, e.g., Centrex, should properly route emergency calls dialed using digits "911" or "9-911." The FCC should recognize that adoption of this rule would conflict with the use by the public network of any sequence of dialed digits beginning with "11." For example, public network Vertical Service Codes (VSC), used to initiate call forwarding and the like, begin with the digits "11," for dial-pulse phones. Use of these codes would present a serious conflict when a dial-pulse MLTS user wishes to use the vertical services provided by the local exchange carrier. We recommend that this use of "11" be abolished in order to prevent misrouting of calls to Public Safety Answering Points (PSAPs). Furthermore, PSAPs must recognize that there may be an increase of misdialed calls from MLTS users

who intended to dial legitimate codes, such as “9-011.”

**Rules proposed for commercial mobile radio services (CMRS) should be restricted to licensed common carriers**

The FCC also proposes rules that would require all Commercial Mobile Radio Services to support enhanced 911 services.

Siemens Rolm recommends that these rules be restricted to licensed common carriers, such as licensed PCS and cellular services, rather than extended to all Commercial Mobile Radio Services. We are concerned that otherwise the rules might be considered as applicable to wireless multi-line telecommunications system (“W-MLTS”) deployments operating in “tenant service” mode.<sup>1</sup> We believe this would be inappropriate because there are important differences between a Licensed Common Carrier and a W-MLTS which have implications for the ability of a Public Safety Answering Point (“PSAP”) to locate emergency callers in a timely fashion.

1. The distances between the radio ports of a W-MLTS will be on the order of 100 feet or less, while the distances between the base stations of the Licensed Common Carriers may range up to several miles. The application of sophisticated technological measures to interpolate user location between radio ports may provide little or no benefit to the user of a W-MLTS, as compared to that provided to the user of a Licensed Common Carrier.
2. A W-MLTS and a Licensed Common Carrier operate with different purposes. The former is intended for use by a restricted group of pre-registered users and handsets, while the latter is intended to be accessible by as many users and handsets as possible. For that reason, there will be inherent barriers to access of a W-MLTS, including incompatibilities of air interfaces, layered operational protocols, and security characteristics, that will impede easy access to 911 services by non-registered handsets.
3. A W-MLTS can direct calls only to pre-registered handsets: a call-back attempt by the PSAP to return an emergency call to a non-registered handset will fail to connect with that handset.

Even if a tenant service application of W-MLTS is considered to fall within the category of CMRS, we believe that technical differences will make imposition of rules intended primarily for Licensed Common Carriers more problematic than helpful. For example, Paragraph 53 proposes use of Signaling System 7 (SS7) as a signaling protocol for CMRS-to-911 tandem office. SS7 is appropriate for Licensed Common Carriers, but MLTS have made no standardized use of it. For W-MLTS, we would recommend ISDN Digital Subscriber Signaling System Number 1 (DSSC1).

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<sup>1</sup>In this mode, the operator of the PBX resells interconnected service to the guests of a hotel, or to other businesses in the same building or shopping mall.

Siemens Rolm therefore proposes that the compatibility of wireless services with enhanced 911 be restricted to Licensed Common Carriers, such as Licensed PCS and Cellular.

Siemens Rolm further proposes that the regulations regarding W-MLTS, whether operated in a strictly private mode or in a tenant service mode, be developed in such a way as to allow a W-MLTS to support the requirements placed on MLTS generally, as described in Section III, rather than to force a single 911 standard on both licensed and unlicensed wireless systems.

**FCC rules should not prematurely mandate deployment of location technology for in-building application**

The third phase of the FCC's proposed rules for CMRS would require that the mobile station be located in a 3-dimensional environment within a radius of no more than 125 meters, or possibly even more precisely in a multi-story structure. Reference to the Observations and Conclusions of the APCO report, "Survey of Location Technologies to Support Mobile 9-1-1," conducted by C. J. Driscoll & Associates, would suggest that the applicability of the technologies covered to precise in-building location is questionable. In particular,

- Network-based location systems seem to be limited to 100 foot precision in non-urban settings, and accuracy is degraded in dense urban environments.
- The cost of network-based systems, at the low end, is quoted at \$10,000 per base station. For comparison, a typical W-MLTS radio port costs approximately \$1,000.
- External radiolocation networks, such as GPS, are not applicable to in-building locations; they would require supplementary systems, such as handheld direction finding devices. Therefore, such systems offer no advantage over simple identification of the radio port.

These difficulties with applying these systems to precise in-building location are fundamental to radio technology, having to do with attenuation, unpredictable reflections, and multipath. Siemens Rolm suggests that it would premature to fix a schedule to mandate precise in-building location until a technically feasible approach is proposed.

**FCC rules should not mandate unnecessary ALI capabilities in small applications**

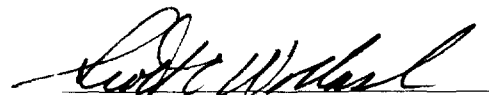
For small applications, such as a remote subsystem of the PBX for which the host switch may belong to a different 911 jurisdiction, the capabilities proposed as requirements may increase the cost of the application to the extent that it becomes unfeasible, because a 911-CAMA interface will be required. In many such applications, all users of the system are located close together, so caller-specific location and call-back information may be unnecessary. For these cases, we propose that a single-line interface for emergency calls should be allowed. Alternatively, we propose that the capabilities of

911 tandem offices be expanded to allow the correct routing of 911 calls to other jurisdictions, so that an emergency call from the remote subsystem can be directed to the correct PSAP.

**Labeling on wireless handsets must be succinct**

Siemens Rolm recommends that any FCC-mandated labeling requirements be succinctly worded in order to properly fit on a wireless handset without overwhelming it. In particular, the statement proposed in Paragraph 55 does not meet this objective.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott E. Wollaston", written over a horizontal line.

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January 11, 1995



## **Appendix: Comments to Proposed Rules**

§ 68.1      *Dispersed private telephone system.*

The use of the terms “Multi-Line Telecommunications System” (MLTS) is an industry standard. MLTS is used in both the TIA TSB103, “PBX and KTS Support of Enhanced 911 Calling Service,” and the T1.411 enhanced 911 trunk standard. Accordingly, Siemens recommends that the phrase *Dispersed private telephone system*, and associated definition, be deleted from the proposed rules and replaced with *Dispersed Multi-Line Telecommunications System*: A PBX or KTS whose connection to the telephone network carries emergency calls from more than one emergency response location.

Siemens also requests clarification of the proposed definition for an *Emergency response location*. As currently written, the definition is nebulous and confusing.

§ 68.106      This section and the following sections require that every dispersed MLTS have enhanced 911 trunks. Requiring an enhanced 911 trunk on small dispersed MLTS, however, is not only unneeded but is technically undesirable and economically unfeasible. For example, a two-trunk two-station KTS where the stations are located in different sites would be required to have an enhanced 911 trunk. TSB103 discusses methods whereby small MLTSs can satisfy enhanced 911 location information requirements without the need for an enhanced 911 trunk, e.g., Figure 4 in TSB103. Proposed rules must be clarified to permit enhanced 911 solutions for small dispersed MLTSs which are technically feasible and cost-effective.

§ 68.320

- (a)      The only standard for enhanced 911 trunks is T1.411. It specifies loop supervision, not E&M. Siemens recommends that any Part 68 amendment for enhanced 911 be independent of the type of supervision used on the enhanced 911 trunk. This is necessary to permit sufficient flexibility to foster development of alternative methods and technological innovation in resolving compatibility problems between MLTS and enhanced 911 systems. In addition, the adopted rules must be compatible with technological improvements in both private and public telecommunications so as not to hinder continual improvement in the provision of enhanced 911 services.
- (b)      While the T1.411 standard specifies use of MF signalling, any Part 68 amendment for enhanced 911 should be independent of the type of signalling used on the enhanced 911 trunk. *See* (a) above. For example, specification of MF signalling prevents an all-ISDN solution.
- (c)      Possible numbering plan conflicts must be resolved before use of 911 without preceding digits can be permitted.

- (f) Requiring all MLTS manufactured to have enhanced 911 trunk capability as specified in the NPRM is economically undesirable and is not needed to comply with enhanced 911 requirements.

Small dispersed MLTS installations can provide enhanced 911 information without having an enhanced 911 trunk. For example, *see* TSB103, Figure 4.

Non-dispersed MLTSs should not be required to have enhanced 911 trunks.

A MLTS in conjunction with adjunct equipment can satisfy requirements for enhanced 911 trunks, where the MLTS, by itself, does not handle enhanced 911 trunks.

- (g) *See* (f) above.